Remarks/Arguments:

No claim amendments have been made with this Response. Claims 1-11 are pending in this application. Claim 1 is the only independent claim. Claims 2-11 depend from claim 1.

I. The Office Action

The Examiner rejects claims 1 and 8 under 35 U.S.C. § 102(b) as anticipated by, or in the alternative, under 35 U.S.C. §103(a) as obvious over Trocciola et al. (U.S. Patent No. 5,330,727). Claims 1 and 8 are also rejected by the Examiner under 35 U.S.C. §103(a) as unpatentable over Trocciola et al. in view of Aoyama (U.S. Patent No. 5,843,195) and Madgavkar et al. (U.S. Patent No. 4,186,801). Claims 1-2, 4-5, and 7-10 stand rejected by the Examiner under 35 U.S.C. §103(a) as unpatentable over GB 2,075,859 (GB '859) in view of Trocciola et al., Heisel (U.S. Patent No. 4,988,431) and Cook (U.S. Patent No. 5,113,844). The Examiner also rejects claims 3, 6, and 11 with GB '859 as the primary reference.

The Examiner stated at page 8 of the Office Action that applicants' arguments were moot in view of the new grounds of rejection.

II. The Applicants' Response

A. Lack of anticipation by Trocciola et al.

The Examiner rejects claims 1 and 8 under 35 U.S.C. § 102(b) as anticipated by Trocciola et al. Anticipation requires that each and every limitation of the claim be expressly or inherently described in the cited art.

1. Trocciola et al. does not disclose an annular reaction zone

Claim 1 requires that the reaction zone is generally annular in shape. Webster's Rosetta Online Dictionary defines "annular" as pertaining to an annulus or ring; ring shaped. At page 2 of the Office Action, the Examiner states that catalyst beds 22 and 32 annularly surround the cooling coils 24 or 34. The applicants submit that Trocciola et al. is a catalyst bed, defined by containers 21 or 31, and which is supported by gas-permeable support member 23 or 33.

Removal of the helical cooling means results in a bed having a helical bore there through. The applicants submit that one of ordinary skill in the art would not describe a mass having a helical bore traversing through it as "annular." Therefore, the applicants respectfully request the Examiner's reconsideration of the characterization of the catalyst bed in Trocciola et al. as annular.

2. Trocciola et al. does not disclose a catalyst coated on a metal support

Claim 1 also requires that the selective oxidation catalyst is coated on a metal support. At page 3 of the Office Action, the Examiner submits that "coated on" is the process of "coating" the catalyst, which is a product-by-process limitation. The Examiner did not give patentable weight to the claim terms of "catalyst coated on a metal support." The Examiner has also concluded that the claimed end product and Trocciola's end product are the same.

The applicants first submit that the Examiner's unsupported conclusion that the end products of Trocciola et al. and the applicants' invention are the same is in error. MPEP § 2113 states that once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983). Here, however, the Examiner fails to provide a rationale to support the conclusion that the applicants' claimed invention appears to be the same as that described in Trocciola et al. Thus, the burden remains with the Examiner and has not shifted to the applicants.

The applicants submit that the terms "catalyst coated on a metal support" should be given patentable weight because the terms describe structure of the invention. When the terms "catalyst coated on a metal support" are given patentable weight and treated as an element of the claims, Trocciola et al. fails to teach such an element. Webster's Rosetta Online Dictionary defines "coated" as having a coating; covered with an outer layer or film; often used in combination. At least one court has held that the term "coated on" is not merely a process limitation, but defines the type of structure which results from the coating. For example, the

terms "coated on" can be used to define the structure of a paperboard substrate to which is adhered a layer of low density polyethylene polymer. The low density polyethylene is "coated on" a paperboard substrate. *See e.g. Westvaco Corp. v. International Paper Co.*, 991 F.2d 735, 742, 26 USPQ2d 1353, 1358 (C.A.F.C. 1993).

With the above understanding of the terms "coated on," the applicants submit that a person of ordinary skill in the art would not characterize the catalyst bed described in Trocciola et al. as being the same or even similar in structure to the claimed catalyst coated on a metal support. The inventors of the Trocciola et al. reference identified their catalyst as a bed, not a coated catalyst. For example, reference numerals 22 and 32 of Fig. 1 of Trocciola et al. depicts a bed of catalyst material, and in fact, these reference numerals are consistently referred to as a catalyst bed in the specification of Trocciola et al. (see col. 4, ln. 64 - col. 5, ln. 21). Applicants are hard pressed to find a disclosure in Trocciola et al. that suggests that the structure of the catalyst could be anything other than a bed. For this additional reason, the applicants submit that Trocciola et al. does not teach each and every limitation of the claimed invention.

B. Nonobviousness (Trocciola et al. as the primary reference)

Claims 1 and 8 are rejected by the Examiner under 35 U.S.C. §103(a) as unpatentable over Trocciola et al. in view of Aoyama (U.S. Patent No. 5,843,195) and Madgavkar et al. (U.S. Patent No. 4,186,801).

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). As discussed above, the applicants submit that Trocciola et al. fails to disclose an annular reaction zone or a catalyst coated on a metal support. Both Aoyama and Madgavkar et al. fail to supply the missing limitations not taught by Trocciola et al. Reconsideration of the rejection is respectfully requested.

C. Nonobviousness (GB 2,075,859 as the primary reference)

Claims 1-2, 4-5, and 7-10 are rejected by the Examiner under 35 U.S.C. §103(a) as unpatentable over GB 2,075,859 (GB '859) in view of Trocciola et al., Heisel (U.S. Patent No. 4,988,431) and Cook (U.S. Patent No. 5,113,844). The Examiner also rejects claims 3, 6, and 11 with GB '859 as the primary reference.

1. There is no motivation to modify GB '859 to provide a catalyst with little or no pressure drop

At page 5 of the Office Action, the Examiner states that GB '859 does not disclose that the selective oxidation catalyst is coated on a metal support. The Examiner cites Aoyama as teaching a catalyst solution is absorbed onto a catalyst support alumina to form an effective oxidation catalyst, citing col. 11, ln. 8-32 of Aoyama. The Examiner also cites Madgavkar et al. as teaching that coating a catalyst on a metal support permits passage of gases with little pressure drop. The Examiner concludes that it would be obvious to one of ordinary skill in the art to modify the selective oxidation catalyst of Trocciola et al. with the catalyst made by the process in Aoyama or Madgavkar et al. to provide an effective catalyst and support with less pressure drop.

The applicants respectfully disagree and submit that one skill in the art would not be motivated to modify the catalyst of the GB '859 to decrease the pressure drop because GB '859 has already solved the problem of having a high pressure drop. At col. 2, lns. 118-129, GB '859 states that a problem in the art is a pressure drop between two systems and that the present invention seeks to overcome these limitations. Because the pressure drop problem is already solved by GB '859, the applicants submit there is no motivation for one of ordinary skill in the art to look toward the teachings of Aoyama and Madgavkar et al., which also teach solutions to the problem of a pressure drop between two systems. Without a motivation to modify GB '859, the Examiner's rejection is in error. The applicants respectfully request the Examiner's reconsideration of this rejection.

2. Changing the cooling system in GB '859 to a counter current system would destroy the intended purpose of GB '859

At page 5 of the Office Action, the Examiner states that GB '859 fails to disclose "counter-current" cooling means. The Examiner cites Heisel and Cook as disclosing a counter-current heat exchange system. The motivation provided by the Examiner to modify GB '859 is that both Heisel and Cook disclose that a counter-current heat exchange is more efficient than a co-current heat exchange system. According to the Examiner, one of ordinary skill in the art would thus be motivated by the disclosure of Heisel and Cook to modify GB '859 to have a counter-coolant heat exchange system.

The applicants respectfully disagree. MPEP § 2143.01 provides that if a proposed modification renders the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). A counter-current heat exchange system in GB '859 would not be efficient, as the proposed modification suggests, because it is contrary to the teachings of the cooling system in GB '859. In fact, modifying GB '859 to have a counter-current system destroys the intended purpose of the cooling system in GB '859. GB '859 expressly discloses at col. 1, ln. 30-33 that the cooling means is arranged to be co-current with the flow of gas through the reactor. Moreover, col. 1, lns. 58-60 state that the heat exchange system is in the form of a natural-circulating steam boiler and the water through the heat exchanger system flows by natural circulation. Water flows down, steam flows upwards. See col. 2. lns. 114-117. Modifying this co-current system to be counter-current would require acting against the forces of a natural-circulating steam boiler. For example, a counter-current system would require steam to be forced downward and water to flow upward. This modification would destroy the intended purpose of having a natural-circulating cooling system as described in GB '859. Reconsideration of this rejection is respectfully requested.

III. Conclusion

For the above reasons, the Examiner's rejection that the claimed invention is anticipated or rendered obvious by the claimed invention is in error. One of ordinary skill in the art would

not read Trocciola et al. as disclosing each and every limitation of the claimed invention. Additionally, one of ordinary skill in the art would not be motivated by the cited references to modify GB '859 because 1) GB '859 already solves the problem presented by the prior art, and 2) the proposed modification to GB '859 would render the heat exchange system contrary to its intended purpose.

Finally, the applicants request a telephone interview with the applicants' undersigned representatives if such action will expedite the prosecution of the application or if the Examiner has any suggestions or questions concerning the application or the present Response. If the claims of the application are not believed to be in full condition for allowance, for any reason, the applicants respectfully request the constructive assistance and suggestions of the Examiner so that the application can be placed in allowable condition as soon as possible and without the need for further proceedings.

Respectfully submitted,

Christopher R. Lewis, Reg. No. 36,201
Christian M. Bauer, Reg. No. 51,443
Attorneys for Applicants

CMB/dlk/lrb

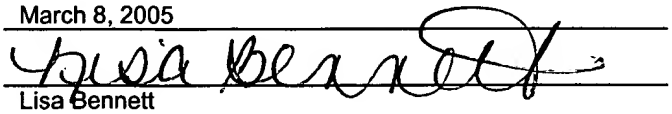
Dated: March 8, 2005

P.O. Box 980
Valley Forge, PA 19482-0980
(610) 407-0700

The Commissioner for Patents is hereby authorized to charge payment to Deposit Account No. **18-0350** of any fees associated with this communication.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on:

March 8, 2005



Lisa Bennett

LRB_I:\JMYT\245US\AMEND02.DOC